

Revision of the Genus *Pandanus* Stickman, Part 32 The New Section *Involuta* from Papua

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THE FLORA of New Guinea is rich in both the number of the species and the sections of *Pandanus*. In the present paper are described an additional species and section from that large tropical island.²

Section *Involuta* sect. nov. (subgen. *Lophostigma*)

Carpelis separatis 1-loculatis ellipsoideis, stylo breviter cylindrico et infra stigmatem bojaris formanti deinde involuta prolongato et 2-6 lobis cordatis vel flabellatis centralibus supra stigmatem circularem formanti.

Carpels distinct, 1-celled, ellipsoid; style apical, short cylindric, forming a collar below the stigma and at one edge upward produced, involute, with 2-6 cordate or flabellate horizontal lobes, central and above the irregular ring-like stigma; staminate plants unknown.

HOLOTYPE: *Pandanus involutus* St. John.

DISCUSSION: The section also contains *P. leiophyllus* Martelli, of Indonesian New Guinea.

The name is from the Latin participle, *involutus*, infolded, and refers to the structure of the style apex.

Pandanus involutus sp. nov. (sect. *Involuta*) Figs. 279 and 279A

DIAGNOSIS HOLOTYPE: Arbor gracilis ad 12 m alta, trunco brevi ex radicibus fulturosis paucissimis longioribus salientibus sustentis, foliis 1.19 (+ 0.04 ?) m longis proxima basem 3 cm latis in medio 2.8 cm latis coriaceis supra viridibus lucidisque infra pallidioribus et glaucis U-sulcatis 2-plicatis in sectione

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² This can be inserted in the author's key in Part 1 of this series (Pacific Sci. 14(3):225), after the second I. "Stigma terminal," insert:

- a. Stigma an irregular ring, partly covered by involute central cordate or flabellate lobes of the style *Involuta*
- a. Stigma not so,

mediali cum 48 nervis parallelis secundariis in quoque dimidio nervis tertiis nullis lamina ligulata sed in parte $\frac{1}{4}$ ultima in apice gracili trigono subulato sensim diminuenti (sed apice perduto) eo in puncto circa 10 cm ex apice 3 mm lato basi inermi pallida vel rosacea, ex 2.5 cm marginibus cum aculeis 0.3-0.7 mm longis 1.5-3 mm separatis infimis deltoideis salientibus tum alteris lancei-deltoideis distali concavis sed in toto ascendentibus pallidis, midnervo infra ultra mediam inermi, in sectione mediali marginibus cum serrulis 0.2-0.4 mm longis 1-3 mm separatis brunneis, in apice subulato marginibus et midnervo infra cum crenulis 0.1-0.2 mm longis 0.3-1 mm separatis, syncarpio licet 13-15 cm longis 10-10.5 cm diametro licet ovoideis in bracteis siccis clausis, nucleo ovoideo in centro molle in margine membranoso et cum fibris paucis superficie cum foramenibus favicis 3-4 mm profundis membranosis pallidis, drupis 18-20 mm longis 7-9 mm latis 6-8 mm crassis oblancei-ellipsoideis parte $\frac{1}{3}$ supra libera obtusa, pileo 7-9 mm alto latiter ovoideo 6-anguloso laevi lucido cum vicinis adnatis et in laminis caducis, stylo osseoso lucido apicali cylindrico 1-1.5 mm alto deinde in 2-6 lobis involutis elevatis productis parte $\frac{1}{2}$ - $\frac{2}{3}$ supra horizontali irregulariter cordata vel flabellata, stigmati solitario suborbiculari intra bojaris inferis et lobis centralibus superis styli, endocarpio in parte $\frac{2}{3}$ infera truncato osseoso obscure brunneo vel nigro lateribus lateralibus 1.3-1.8 mm crassis intra laevibus lucidis, semine 9-10 mm longo, mesocarpio apicali 3 mm longo oblatiori-orbiculari cavernoso cum membranis brunneis paucis, mesocarpio basali parvo fibroso et carnosio.

DIAGNOSIS OF HOLOTYPE: Slender tree up to 12 m tall, trunk short, supported on unusually few, very long, wide-flung prop roots; leaves 0.93-1.19 (+ 0.04 ?) m in length, near the base 3 cm wide, at the middle 2.8 cm wide, coriaceous, green and shiny above, pale green and glaucous below, U-sulcate, 2-pleated, at midsection with 48 parallel secondary veins in each half, no tertiary veins; blade ligulate but in outer $\frac{1}{4}$ gradually tapering into the slender trigonous subulate apex (but the small tip lost in ours), this at about 10 cm down 3 mm wide, the base unarmed, pale or pinkish, beginning at 2.5 cm up the margins with prickles 0.3-0.7 mm long, 1.5-3 mm apart, the lowest few deltoid, salient,

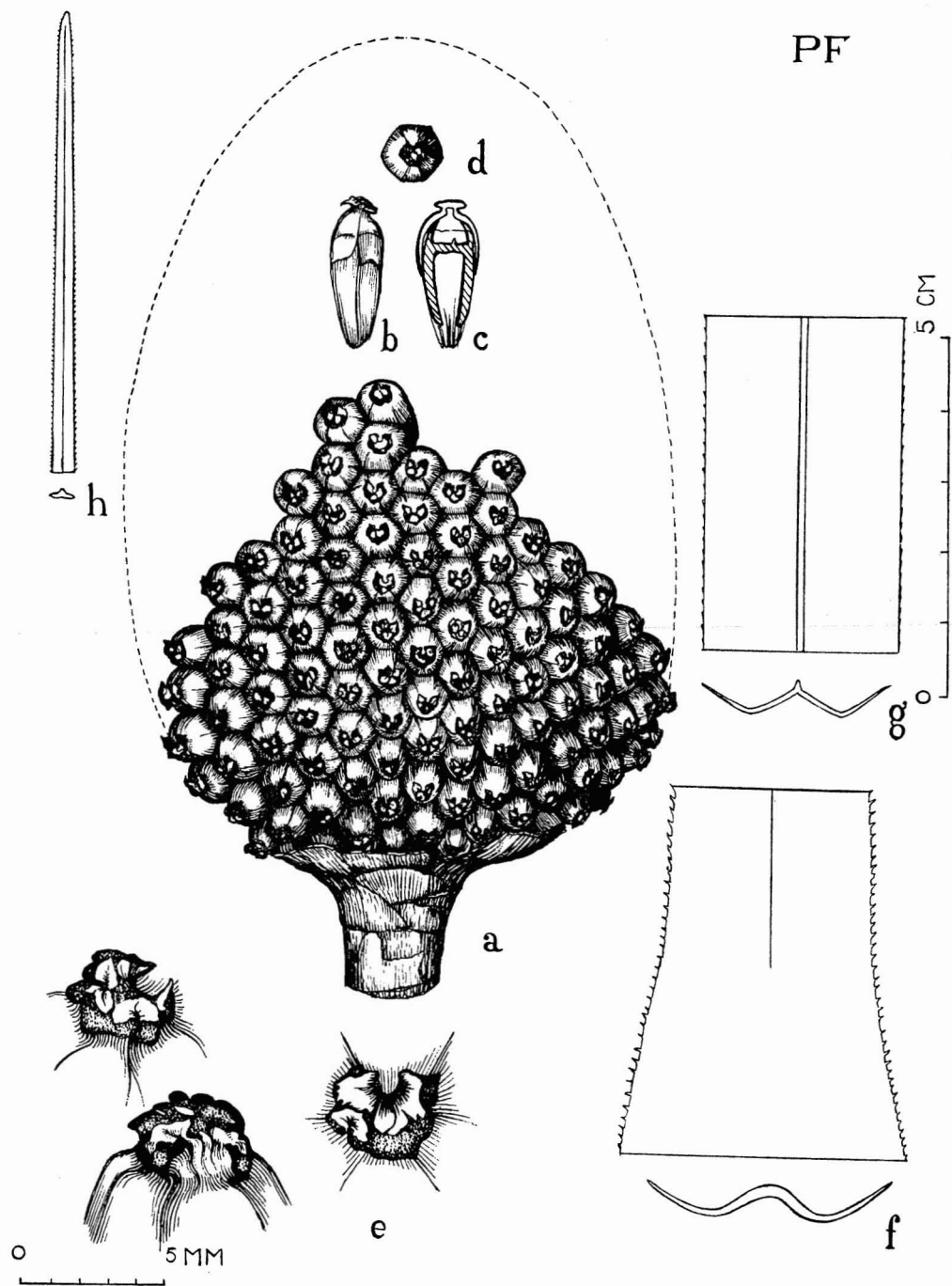


FIG. 279. *Pandanus involutus* St. John, from holotype. *a*, Syncarp, lateral view, $\times 1$; *b*, drupe, lateral view, $\times 1$; *c*, drupe, longitudinal median section, $\times 1$; *d*, drupe, apical view, $\times 1$; *e*, stigmas, apical and oblique views, $\times 4$; *f*, leaf base, lower side, $\times 1$; *g*, leaf middle, lower side, $\times 1$; *h*, leaf apex, lower side, $\times 1$.



FIG. 279A. *Pandanus involutus* St. John. Habit view of holotype.

then the succeeding ones lance-deltoid, the outer edge concave, but the whole ascending, pale; the midrib below unarmed to well beyond the middle; at midsection the margins with serrations 0.2–0.4 mm long, 1–3 mm apart, brown; on the subulate apex the margins and midrib below with crenulations 0.1–0.2 mm long, 0.3–1 mm apart; infructescence with a solitary syncarp, erect among the leaves; peduncle 18 mm in diameter at apex, more than 7 cm long, clavate, 3-sided, with crowded, deciduous bracts; syncarp apparently about 12.5 cm long, it is 10–10.5 cm in diameter, ellipsoid, enclosed in dry, brown bracts, these in 3 ascending tiers, each of 4–6 imbricate bracts, the outermost one with the body 21 cm long, 8 cm wide, lanceolate, the linear tip lost; the 3–4 inner bracts in each tier subequal, 14–15 cm long, 10–12 cm wide, ovate, acute, the upper margins and midrib minutely prickly; core ovoid, the whole center of soft, evanescent tissue, the margin of membranes and a few fibers, the outer surface pocked by honeycomb-like sockets (for the

drupe bases), 3–4 mm deep, of pale membranous tissue; drupes 18–20 mm long, 7–9 mm wide, 6–8 mm thick, oblong-ellipsoid, 6-angled, upper $\frac{1}{3}$ free, obtuse; pileus 7–9 mm high, broadly ovoid, 6-angled, smooth, shining, the adjacent ones adnate and dehiscing in sheets; style bony, shining, apical, forming a stout cylinder 1–1.5 mm high which then is produced into 2–6 involute raised lobes, their upper portions horizontal, irregularly cordate or flabellate and occupying $\frac{1}{2}$ – $\frac{2}{3}$ of the truncate stigmatic apparatus; stigma solitary, but occurring as the marginal part of the apical disk, 3–4.5 mm in diameter, more or less circular, but of irregular shape, filling the interval between the collar of the lower part of the style and its involute expanded central lobes; endocarp in lower $\frac{2}{5}$, obovoid, truncate, bony, dark brown to black, the lateral walls 1.3–1.8 mm thick, within smooth, shining; seed 9–10 mm long; apical mesocarp 3 mm long, very oblate orbicular, a cavern with a few brownish membranes; basal mesocarp scant, fibrous and fleshy.

HOLOTYPE: Papua. Rossel I., Abaleti, common in rain forest of the ridges, 20 m alt, Oct. 8, 1956, L. J. Brass 28,366 (K). Isotypes (A, L, US)!

DISCUSSION: The only close relative of this species is *P. leiophyllus* Martelli, from Windesi, Geelvink Bay, Indonesian New Guinea, a species with the drupes with the upper $\frac{1}{6}$ free; pileus 4–5 mm high, rounded convex, broadly retuse, and many with hornlike, lateral ascending processes; stigma with one broad invagination at the sinus and slight hints of others around the margin; endocarp walls 0.7–0.8 mm thick; leaves 3.4–3.5 cm wide, the secondary parallel veins 42–46 in each half at midsection, the tertiary cross veins seen below in outer $\frac{1}{4}$, oblique, forming narrow rhombic meshes. *P. involutus* has the drupes with the upper $\frac{1}{3}$ free; pileus 7–9 mm high, broadly ovoid, not horned; stigma with 2–6 prominent stylar invaginations; endocarp walls 1.3–1.8 mm thick; leaves 3 cm wide, at midsection with 48 parallel secondary veins in each half, the tertiary veins none.

In 1913–1914, in the same book, Martelli

published his binomial three times as *P. leio-
phyllus* and twice as *P. leiophyllus*. He appar-
ently considered the *i* and the *j* as identical and
interchangeable. Now, it is settled by the 1966
International Code, Art. 73, Note 6, that when

used as a vowel, it must be *i*, so his epithet is
P. leiophyllus.

The new epithet is the Latin participle, *in-
volutus*, infolded, and is given with reference
to the involute style.